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From: "Fox, Steve (New Bedford)" <Steve.Fox@jacobs.com>

To: Dave Dickerson/R1/USEPA/US@EPA

Delivered Date: 07/15/2009 09:06 AM EDT

Subject: FW: LHCDF air modeling assumption and scenarios

ATTACHMENT: Proposed LHCDF Air Modeling.pdf
ATTACHMENT: CAD modeling and Disposal Assumptions.pdf
ATTACHMENT: Proposed LHCDF Air Modeling.doc
Hi Dave,

Please find attached the assumptions that I had Changsheng pull together based upon the ERDC modeling information and assumptions.

Thanks,

Steve

-----Original Message-----

From: Lu, Changsheng
Sent: Tuesday, July 14, 2009 4:04 PM
To: Fox, Steve (New Bedford)
Subject: LHCDF air modeling assumption and scenarios

Steve,

Here are the info I put together for the modeling effort. I think we miss the info on cell size (not that important since it is mostly a near point source in the model). The main thing is the dredging and disposing length. Hope you and Anita can provide the length based on dredging volumes. For 3-year scenario, it is about 110000 cy/year. For 5-year scenario, it is about 70000 cy/year.

Please call or email me if you have any questions.

Changsheng

-----Original Message-----

From: Fox, Steve (New Bedford)
Sent: Thursday, July 09, 2009 9:29 AM
To: Lu, Changsheng
Subject: FW: Mean Constituents by Lift/Year

FYI, I will give you a call.

Thanks,

Steve

-----Original Message-----

From: Leitch, Robert A NAE [mailto:Robert.A.Leitch@usace.army.mil]
Sent: Wednesday, July 01, 2009 11:37 AM
To: Fox, Steve (New Bedford)
Subject: FW: Mean Constituents by Lift/Year

-----Original Message-----

From: Fredette, Thomas J NAE
Sent: Wednesday, July 30, 2008 11:56 AM
To: Leitch, Robert A NAE; Schroeder, Paul R ERDC-EL-MS; Ruiz, Carlos E ERDC-EL-MS; Mitkevicius, K C NAE; 'dickerson.dave@epamail.epa.gov'
Subject: Mean Constituents by Lift/Year

The attached pdf file contains a summary of an analysis I did looking at the estimated mean concentration of Total PCB, Cu, Silt/Clay, and TOC under both a 3-lift and 5-lift scenario for the Upper Harbor CAD cell. That analysis was done using a straight average of the DMU constituent values within each lift and also, for PCBs, computing a DMU-volume weighted average (last column of table). The table also includes average values for the Lower Harbor CAD cell under a 2-lift scenario.

A caveat: My total volume numbers do not precisely match an estimate of volume Dave recently provided to me (28 July), but they do come close to the original estimate on the first tab of the attached spreadsheet (provided sometime earlier by Dave). Nonetheless, I think for the purposes of this analysis slight differences in volumes (Upper Harbor estimate 345,000 vs. 403,000) won't make a substantial difference.

The 5-lift and 3-lift non-weighted averages show similar ranges for the various constituents with the 5-lift scenario showing an intermediate PCB value of 889 in lift 2 that is not reflected in the 3-lift scenario (basically in the 5-lift scenario the DMUs of lift 2 contributing to this value get incorporated into lift 1 of the 3-lift scenario).

The PCB weighted average shows general agreement with the non-weighted approach, although lift-2 under both scenarios is somewhat higher in the weighted average calculation (5-lift; 889 vs. 1230: 3-lift; 281 vs. 435).

In general, I believe that this analysis supports a conclusion that modeling of the upper harbor can be done based on three composites. The analysis also suggests that use of a volume weighted average may not provide much additional discrimination. Therefore, I did not conduct that analysis for the other constituents.

I have attached the spreadsheet used to generate the pdf table if anyone wants to dig into the weeds.

In particular, Paul and Carlos should comment on whether they generally concur or whether they think some different analysis of the data would be critical for model input and lift assumptions.

Tom

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